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Val Val Gly Asn Phe Asn Lys Ser Ile Val Ala Arg Leu Phe Ser Asp
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Ala Arg Arg Leu Leu Leu Tyr Ser Gln Lys Asp Thr Ser Met Lys Asp
    50                  55                  60

Met Arg Lys Val Leu Arg Thr Leu Gln Gln Ile Lys Lys Ser Ser Ser
65                  70                  75                  80

Asn Leu Lys Leu Gln Asp Phe Leu Val Asp Asn Glu Thr Phe Ser Gly
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Leu His Leu Thr Ser Leu Cys Asn Gly Ser Lys Ser Glu Glu Met Ile
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Gln Leu Gly Asp Gln Glu Val Ser Glu Leu Cys Gly Leu Pro Arg Glu
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Lys Leu Ala Ala Ala Glu Arg Val Leu Arg Ser Asn Met Asp Ile Leu
                165                 170                 175

Lys Pro Ile Leu Arg Thr Leu Asn Ser Thr Ser Pro Phe Pro Ser Lys
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Glu Leu Ala Glu Ala Thr Lys Thr Leu Leu His Ser Leu Gly Thr Leu
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Ala Gln Glu Leu Phe Ser Met Arg Ser Trp Ser Asp Met Arg Gln Glu
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Val Met Phe Leu Thr Asn Val Asn Ser Ser Ser Ser Ser Thr Gln Ile
225                 230                 235                 240

Tyr Gln Ala Val Ser Arg Ile Val Cys Gly His Pro Glu Gly Gly Gly
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Leu Lys Ile Lys Ser Leu Asn Trp Tyr Glu Asp Asn Asn Tyr Lys Ala
                260                 265                 270

Leu Phe Gly Gly Asn Gly Thr Glu Glu Asp Ala Glu Thr Phe Tyr Asp
            275                 280                 285

Asn Ser Thr Thr Pro Tyr Cys Asn Asp Leu Met Lys Asn Leu Glu Ser
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Ser Pro Leu Ser Arg Ile Ile Trp Lys Ala Leu Lys Pro Leu Leu Val
305                 310                 315                 320

Gly Lys Ile Leu Tyr Thr Pro Asp Thr Pro Ala Thr Arg Gln Val Met
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Ala Glu Val Asn Lys Thr Phe Gln Glu Leu Ala Val Phe His Asp Leu
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Glu Gly Met Trp Glu Glu Leu Ser Pro Lys Ile Trp Thr Phe Met Glu
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Asn Ser Gln Glu Met Asp Leu Val Arg Met Leu Leu Asp Ser Arg Asp
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Asn Asp His Phe Trp Glu Gln Gln Leu Asp Gly Leu Asp Trp Thr Ala
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Gln Ala Ile Arg Thr Ile Ser Arg Phe Met Glu Cys Val Asn Leu Asn
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Lys Leu Glu Pro Ile Ala Thr Glu Val Trp Leu Ile Asn Lys Ser Met
        450   455   460

Glu Leu Leu Asp Glu Arg Lys Phe Trp Ala Gly Ile Val Phe Thr Gly
465   470   475   480

Ile Thr Pro Gly Ser Ile Glu Leu Pro His His Val Lys Tyr Lys Ile
                485   490   495

Arg Met Asp Ile Asp Asn Val Glu Arg Thr Asn Lys Ile Lys Asp Gly
            500   505   510

Tyr Trp Asp Pro Gly Pro Arg Ala Asp Pro Phe Glu Asp Met Arg Tyr
        515   520   525

Val Trp Gly Gly Phe Ala Tyr Leu Gln Asp Val Val Glu Gln Ala Ile
        530   535   540

Ile Arg Val Leu Thr Gly Thr Glu Lys Lys Thr Gly Val Tyr Met Gln
545   550   555   560

Gln Met Pro Tyr Pro Cys Tyr Val Asp Asp Ile Phe Leu Arg Val Met
            565   570   575

Ser Arg Ser Met Pro Leu Phe Met Thr Leu Ala Trp Ile Tyr Ser Val
            580   585   590

Ala Val Ile Ile Lys Gly Ile Val Tyr Glu Lys Glu Ala Arg Leu Lys
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Glu Thr Met Arg Ile Met Gly Leu Asp Asn Ser Ile Leu Trp Phe Ser
    610   615   620

Trp Phe Ile Ser Ser Leu Ile Pro Leu Leu Val Ser Ala Gly Leu Leu
625   630   635   640

Val Val Ile Leu Lys Leu Gly Asn Leu Leu Pro Tyr Ser Asp Pro Ser
            645   650   655

Val Val Phe Val Phe Leu Ser Val Phe Ala Val Val Thr Ile Leu Gln
            660   665   670

Cys Phe Leu Ile Ser Thr Leu Phe Ser Arg Ala Asn Leu Ala Ala Ala
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Cys Gly Gly Ile Ile Tyr Phe Thr Leu Tyr Leu Pro Tyr Val Leu Cys
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Phe Glu Glu Gln Gly Ile Gly Val Gln Trp Asp Asn Leu Phe Glu Ser
             740             745             750

Pro Val Glu Glu Asp Gly Phe Asn Leu Thr Thr Ser Val Ser Met Met
         755             760             765

Leu Phe Asp Thr Phe Leu Tyr Gly Val Met Thr Trp Tyr Ile Glu Ala
     770             775             780

Val Phe Pro Gly Gln Tyr Gly Ile Pro Arg Pro Trp Tyr Phe Pro Cys
785             790             795                 800

Thr Lys Ser Tyr Trp Phe Gly Glu Glu Ser Asp Glu Lys Ser His Pro
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Gly Ser Asn Gln Lys Arg Ile Ser Glu Ile Cys Met Glu Glu Glu Pro
             820             825             830

Thr His Leu Lys Leu Gly Val Ser Ile Gln Asn Leu Val Lys Val Tyr
         835             840             845

Arg Asp Gly Met Lys Val Ala Val Asp Gly Leu Ala Leu Asn Phe Tyr
     850             855             860

Glu Gly Gln Ile Thr Ser Phe Leu Gly His Asn Gly Ala Gly Lys Thr
865             870             875                 880

Thr Thr Met Ser Ile Leu Thr Gly Leu Phe Pro Pro Thr Ser Gly Thr
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Ala Tyr Ile Leu Gly Lys Asp Ile Arg Ser Glu Met Ser Thr Ile Arg
             900             905             910

Gln Asn Leu Gly Val Cys Pro Gln His Asn Val Leu Phe Asp Met Leu
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Thr Val Glu Glu His Ile Trp Phe Tyr Ala Arg Leu Lys Gly Leu Ser
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Glu Lys His Val Lys Ala Glu Met Glu Gln Met Ala Leu Asp Val Gly
945             950             955                 960

Leu Pro Ser Ser Lys Leu Lys Ser Lys Thr Ser Gln Leu Ser Gly Gly
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Ile Ala Ile Ile Ser His Gly Lys Leu Cys Cys Val Gly Ser Ser Leu
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Phe Leu Lys Asn Gln Leu Gly Thr Gly Tyr Tyr Leu Thr Leu Val Lys
        1060                1065                1070

Lys Asp Val Glu Ser Ser Leu Ser Ser Cys Arg Asn Ser Ser Ser Thr
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Val Ser Tyr Leu Lys Lys Glu Asp Ser Val Ser Gln Ser Ser Ser Asp
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Ala Gly Leu Gly Ser Asp His Glu Ser Asp Thr Leu Thr Ile Asp Val
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Ser Ala Ile Ser Asn Leu Ile Arg Lys His Val Ser Glu Ala Arg Leu
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Val Glu Asp Ile Gly His Glu Leu Thr Tyr Val Leu Pro Tyr Glu Ala
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Ala Lys Glu Gly Ala Phe Val Glu Leu Phe His Glu Ile Asp Asp Arg
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Leu Ser Asp Leu Gly Ile Ser Ser Tyr Gly Ile Ser Glu Thr Thr Leu
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Glu Glu Ile Phe Leu Lys Val Ala Glu Glu Ser Gly Val Asp Ala Glu
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Thr Ser Asp Gly Thr Leu Pro Ala Arg Arg Asn Arg Arg Ala Phe Gly
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Asp Lys Gln Ser Cys Leu Arg Pro Phe Thr Glu Asp Asp Ala Ala Asp
        1220                1225                1230

Pro Asn Asp Ser Asp Ile Asp Pro Glu Ser Arg Glu Thr Asp Leu Leu
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Ser Gly Met Asp Gly Lys Gly Ser Tyr Gln Val Lys Gly Trp Lys Leu
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Thr Gln Gln Gln Phe Val Ala Leu Leu Trp Lys Arg Leu Leu Ile Ala
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Arg Arg Ser Arg Lys Gly Phe Phe Ala Gln Ile Val Leu Pro Ala Val
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Phe Val Cys Ile Ala Leu Val Phe Ser Leu Ile Val Pro Pro Phe Gly
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Leu Asn Ala Leu Thr Lys Asp Pro Gly Phe Gly Thr Arg Cys Met Glu
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Gly Asn Pro Ile Pro Asp Thr Pro Cys Gln Ala Gly Glu Glu Glu Trp
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Thr Thr Ala Pro Val Pro Gln Thr Ile Met Asp Leu Phe Gln Asn Gly
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Asn Trp Thr Met Gln Asn Pro Ser Pro Ala Cys Gln Cys Ser Ser Asp
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Ile Ala Lys Ser Leu Lys Asn Lys Ile Trp Val Asn Glu Phe Arg Tyr
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Gly Gly Phe Ser Leu Gly Val Ser Asn Thr Gln Ala Leu Pro Pro Ser
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Ala Lys Asp Ser Ser Ala Asp Arg Phe Leu Asn Ser Leu Gly Arg Phe
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Met Thr Gly Leu Asp Thr Arg Asn Asn Val Lys Val Trp Phe Asn Asn
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Val Ile Phe Ala Met Ser Phe Val Pro Ala Ser Phe Val Val Phe Leu
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Ile Gln Glu Arg Val Ser Lys Ala Lys His Leu Gln Phe Ile Ser Gly
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Val Lys Pro Val Ile Tyr Trp Leu Ser Asn Phe Val Trp Asp Met Cys
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Asn Tyr Val Val Pro Ala Thr Leu Val Ile Ile Ile Phe Ile Cys Phe
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Gln Gln Lys Ser Tyr Val Ser Ser Thr Asn Leu Pro Val Leu Ala Leu
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Ser Phe Val Phe Lys Ile Pro Ser Thr Ala Tyr Val Val Leu Thr Ser
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Glu Leu Phe Thr Asp Asn Lys Leu Asn Asn Ile Asn Asp Ile Leu Lys
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Leu Ile Gln Tyr Arg Phe Phe Ile Arg Pro Arg Pro Val Asn Ala Lys
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Leu Ser Pro Leu Asn Asp Glu Asp Glu Asp Val Arg Arg Glu Arg Gln
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Arg Ile Leu Asp Gly Gly Gly Gln Asn Asp Ile Leu Glu Ile Lys Glu
          1845   1850   1855

Leu Thr Lys Ile Tyr Arg Arg Lys Arg Lys Pro Ala Val Asp Arg Ile
          1860   1865   1870

Cys Val Gly Ile Pro Pro Gly Glu Cys Phe Gly Leu Leu Gly Val Asn
     1875   1880   1885

Gly Ala Gly Lys Ser Ser Thr Phe Lys Met Leu Thr Gly Asp Thr Thr
     1890   1895   1900

Val Thr Arg Gly Asp Ala Phe Leu Asn Arg Asn Ser Ile Leu Ser Asn
1905   1910   1915   1920

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Ile His Glu Val His Gln Asn Met Gly Tyr Cys Pro Gln Phe Asp Ala
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Ile Thr Glu Leu Leu Thr Gly Arg Glu His Val Glu Phe Phe Ala Leu
          1940                1945                1950

Leu Arg Gly Val Pro Glu Lys Glu Val Gly Lys Val Gly Glu Trp Ala
          1955                1960                1965

Ile Arg Lys Leu Gly Leu Val Lys Tyr Gly Glu Lys Tyr Ala Gly Asn
     1970                1975                1980

Tyr Ser Gly Gly Asn Lys Arg Lys Leu Ser Thr Ala Met Ala Leu Ile
1985                1990                1995                2000

Gly Gly Pro Pro Val Val Phe Leu Asp Glu Pro Thr Thr Gly Met Asp
          2005                2010                2015

Pro Lys Ala Arg Arg Phe Leu Trp Asn Cys Ala Leu Ser Val Val Lys
          2020                2025                2030

Glu Gly Arg Ser Val Val Leu Thr Ser His Ser Met Glu Glu Cys Glu
          2035                2040                2045

Ala Leu Cys Thr Arg Met Ala Ile Met Val Asn Gly Arg Phe Arg Cys
     2050                2055                2060

Leu Gly Ser Val Gln His Leu Lys Asn Arg Phe Gly Asp Gly Tyr Thr
2065                2070                2075                2080

Ile Val Val Arg Ile Ala Gly Ser Asn Pro Asp Leu Lys Pro Val Gln
          2085                2090                2095

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Arg Asn Met Leu Gln Tyr Gln Leu Pro Ser Ser Leu Ser Ser Leu Ala
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Arg Ile Phe Ser Ile Leu Ser Gln Ser Lys Lys Arg Leu His Ile Glu
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Asp Tyr Ser Val Ser Gln Thr Thr Leu Asp Gln Val Phe Val Asn Phe
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Ala Lys Asp Gln Ser Asp Asp Asp His Leu Lys Asp Leu Ser Leu His
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Leu Asp Arg Glu Asp Leu His Cys Asp Ile Asp Glu Thr Cys His Phe
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\<213\> Human

\<220\>
\<223\> human Intron-Sequence of ABCA8 (ABC-new)

\<400\> 21
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\<210\> 22
\<211\> 15
\<212\> DNA
\<213\> Human

\<400\> 22
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\<210\> 23
\<211\> 372
\<212\> DNA
\<213\> Human

\<220\>
\<223\> human cDNA

<400> 23

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<211> 281
<212> DNA
<213> Human

<220>
<223> human cDNA

<400> 24

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<211> 2258
<212> DNA
<213> Human

<220>
<223> human cDNA of Huwhite2

<400> 25

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<210> 26
<211> 820
<212> DNA
<213> Human


<220>
<223> human cDNA


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<210> 27
<211> 575
<212> DNA
<213> Human


<220>
<223> human cDNA


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<210> 28
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<212> DNA
<213> Human

<220>
<223> human cDNA

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<212> DNA
<213> Human

<220>


<220>
<223> human cDNA of ABCG2

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<211> 6491
<212> DNA
<213> Human


<220>
<223> human cDNA of ABCA3 (ABC3)


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<220>
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<400> 37
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<400> 39
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<220>
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